

# Intensifying Efforts to Understand Music and Psychological Well-being: How Federal Partnerships Have Helped Us

SUNIL IYENGAR

## ABSTRACT

*This article discusses three federal initiatives with potential for making significant contributions to the body of research on music and psychological well-being. Each project involves creative collaborations across US government, and in each case the National Endowment for the Arts (NEA) has played a catalytic role. The Interagency Task Force on the Arts and Human Development, a 17-member alliance of federal agencies, has prompted a National Academies workshop sponsored by the NEA and the National Institutes of Health (NIH) to explore research gaps and opportunities for studying music and art's relationship to the aging process. A prospective "music/arts module" on the National Children's Study may bring NIH and NEA researchers closer together to study music's effects on psychological well-being at the other end of the lifespan. And the NEA's commitment to cosponsor delivery of neurological music therapy at the Walter Reed National Military Medical Center will give such research a needed boost within the military health care establishment. Published 2013. This article is a U.S. Government work and is in the public domain in the USA.*

**Key words:** National Endowment for the Arts, NEA, task force, human development, arts, music, music therapy, music and the brain, older adults, aging, early childhood, National Institutes of Health, NIH

In recent years, the National Endowment for the Arts' (NEA) research division has grown dramatically – both in terms of the technical expertise it retains and the kinds of projects it pursues. In addition to serving as the US government's clearinghouse for nationally reliable statistics about arts and culture, the Agency now is engaged in several projects to ascertain the "value and impact" of the arts to American life, in accordance with the NEA's Strategic Plan. In

September 2012, moreover, the NEA's Office of Research & Analysis published *How Art Works: A Five-Year Research Agenda for the National Endowment for the Arts, with a System Map and Measurement Model*, which sketches a theoretical framework to guide current and future research about the arts' benefits to individuals and communities.

A critical piece of the NEA's Research Agenda is the measurement of cognitive and emotional responses to arts participation, inclusive of art-making. Homing in on music and psychological well-being, at least three ongoing research initiatives will yield findings relevant to this domain. They are:

- The Federal Interagency Task Force on the Arts and Human Development;
- The National Children's Study;
- An arts therapy and research collaboration between the NEA and the US Department of Defense's National Intrepid Center of Excellence.

What follows is a brief description of each program and its potential contributions to public knowledge about music's role in shaping psychological health-related outcomes.

## THE FEDERAL INTERAGENCY TASK FORCE ON THE ARTS AND HUMAN DEVELOPMENT

In March 2011, the NEA and the US Department of Health and Human Services (HHS) convened a first-of-its-kind meeting to share research and evidence-based practices on using arts-based interventions to improve cognitive, social, and behavioral outcomes at different stages of life. Launched by NEA Chairman Rocco Landesman and HHS Secretary Kathleen Sebelius, the day-long event spanned such diverse disciplines as cognitive neuroscience, psychology, arts education, music and theater, and clinical specialties such as pediatrics and geriatrics.

After the event, the NEA's Office of Research & Analysis teamed with the National Center for Creative Aging, a not-for-profit organization in Washington, DC, to produce a white paper with recommendations. Titled *The Arts and Human Development: Framing a National Research Agenda for the Arts, Lifelong Learning, and Individual Well-being*, the white paper was jointly issued by the NEA and HHS later in 2011. The paper sets forth the rationale for creating "a federal interagency task force to promote the regular sharing of research and information about the arts and human development."

Fortunately, this is one government white paper that did not go unanswered. Concurrent with the release of the white paper, the NEA announced formation of just such an entity, including representatives from the HHS' Administration on Aging, its Administration for Children and Families and its Substance Abuse & Mental Health Services Administration; the US Department of Education's Office of Innovation & Improvement; the National Science Foundation

(NSF); and several institutes from the National Institutes of Health (NIH), including the National Institute of Mental Health.

Currently, the group has 17 active member agencies, offices, divisions, or departments across the federal government. (Leadership from the Institute of Medicine serves in a consulting capacity.) In 2012, under the auspices of the Task Force, the NEA hosted several public webinars showcasing research and evidence-based programs sponsored by one or more of the participating agencies. Examples included a presentation on the Gamelan Project, a NSF-funded pilot study that examined the effects of pitched-percussion instrument-playing on children's ability to synchronize movement and to pay close attention. Other webinars focused on such topics as digital storytelling being used in Native American youth populations to combat youth violence, bullying, and suicide rates; a NIH grant opportunity to conduct basic behavioral research on culture and well-being; and a Department of Education-supported longitudinal study of the impact of arts education in at-risk school districts.

For the purpose of understanding music's effects on psychological well-being, however, two other Task Force activities are more revealing. First, in 2012, the NEA joined with three NIH entities – the National Institute on Aging, the National Center for Complementary and Alternative Medicine, and the Office of Behavioral and Social Sciences Research – in requesting the National Academy of Sciences (NAS) to sponsor a workshop on the arts and aging. The NAS workshop took place in September of that year, with the goal of identifying research gaps and opportunities in evidence collection about the arts' health benefits for older adults. A report from the workshop (*The Arts and Aging: Building the Science*) is now available to the public, at <http://www.nea.gov/national/TaskForce/index.html>, as well a series of NAS-commissioned papers.

Notable presentations at the workshop included: Nina Kraus, Northwestern University, on "Music, Hearing, and Memory," and Gottfried Schlaug, Harvard Medical School, on "Music Training and Brain Function." Kraus used the technique of "brainstem response to complex sounds" (cABR) measurement to assess hearing ability in older people who were musicians and those who were non-musicians. Her findings suggest improved hearing in noise, auditory memory, and biological processing of sound among the musician group. Similarly, Schlaug described in anatomical detail the brain activity of active musicians versus passive listeners, and demonstrated enhanced gait and flexibility among Parkinson's Disease patients.

Although these presentations focused on neural or neurocognitive mechanisms, they may suggest more scope for psychological studies of music and well-being. The workshop itself ended with group recommendations about optimal study designs, methodologies, and outcome measurement tools for understanding the arts' relationship to aging.

As a separate project of the Interagency Task Force on the Arts and Human Development, librarians at the National Institutes of Health Library have volunteered to assist the group in a comprehensive literature review of peer-reviewed published articles, based on research questions to be determined by

the participating agencies. Although the search has not yet begun, it is probable that studies about music and psychological health will surface rapidly. Such research will be shared with the general public through government websites, so that researchers and practitioners in the arts and health will have a consolidated body of evidence to which they may refer when making future inquiries.

## NATIONAL CHILDREN'S STUDY

One of the least surprising, but no less valid, observations made repeatedly at the NAS workshop on the arts and aging was about the paucity of large-scale, longitudinal studies. Regarding the other extreme of the lifespan – early childhood development – the NEA has been able to join with other federal agencies to design research questions that might inform a pioneering effort to examine environmental effects (including cultural influences) on a large, nationwide cohort of children over time. This initiative is the National Children's Study (NCS), whose sponsors include NIH's National Institute of Child Health and Human Development and National Institute of Environmental Health Sciences, the Centers for Disease Control and Prevention, and the Environmental Protection Agency.

In 2012, the NEA's Office of Research & Analysis obtained approval from the study organizers to commit staff resources toward designing arts-related questions that might be included in NCS' vanguard study of children from birth to the age of 21. Based partly on the depth of extant literature focusing on music and psychological well-being, NEA researchers have chosen this dimension of "cultural influences" to address with interview questions to be folded into the study. According to the NEA proposal, for example, parents of children at 48 months would be asked such questions as:

- Throughout your child's fourth year, how often did you either listen to or perform music, or attend a music performance when your child was close enough to hear?
- Throughout your child's fourth year, how often did you deliberately expose your child to music (including pre-recorded music, singing to your child, attending music classes or performances, or any other live performance by you or others)?

In addition, NEA researchers propose asking parents of children who attend daycare or school the following question:

- Throughout your child's fourth year, how often was he/she deliberately exposed to music in other settings when the child's primary caregiver was not directly supervising the child (examples include a child who attends daycare or is under the supervision of someone other than his/her primary caregiver on a regular basis)?

Subsequently, in the “main” NCS study, the parents of children would be asked such questions at 12-, 36- and 60-month intervals – with the prospect that questions in later years would refer to music engagement in formal school settings. The goal of all of these questions is to obtain data that can be analyzed in relation to instrumental and non-instrumental measures such as school completion, school performance, and socio-emotional variables including empathy, confidence, and problem-solving (assuming that such data are captured elsewhere in the study). Notably, the NEA’s proposed questions allow researchers to distinguish between active and passive engagement in music, and the multiple-choice options associated with each question mentioned earlier will permit measurement of frequency of engagement (e.g. “every day,” “a few times a week,” “a few times a month,” “a few times throughout the year”). NEA researchers are also proposing a question about mothers’ having engaged with music while pregnant. Important to note, meanwhile, is that all NEA questions exist in draft form only and are, to date, not guaranteed for inclusion in the study.

## NEA-NICOE COLLABORATION

Perhaps the most fetching example of an NEA-sponsored program to study music’s relationship to psychological well-being – because, in large measure, it is already under way – is the agency’s collaboration with the National Intrepid Center of Excellence (NICoE) in Bethesda, Maryland. As noted on its website, NICoE is a US Department of Defense institute “dedicated to providing cutting-edge evaluation, treatment planning, research and education for service members and their families dealing with the complex interactions of mild traumatic brain injury and psychological health conditions.”

In this capacity, the center employs a comprehensive, interdisciplinary model of treatment and evaluation, replete with both traditional (Western) and complementary and alternative medicine modalities. For example, patients can receive treatments in neurology, neuropsychiatry, and/or neuropsychology in combination with physical therapy, sleep therapy, speech therapy, and – worth stressing for the purpose of this summary – art, music, and creative writing therapies.

As part of their care, service members work one-on-one with a NICoE arts therapist on mask-making, expressive writing, and montage painting. In November 2012, moreover, the NEA and NICoE announced a partnership to bring neurologic music therapy to the NICoE campus. The initiative builds on an earlier collaboration involving the adaptation of the NEA’s critically acclaimed Operation Homecoming writing program to serve NICoE service members and their families.

In particular, the NEA has contributed programmatic and research expertise toward refining the expressive-writing workshop “prompts” used by NICoE service members and thus encourage themes that have emerged as holding the greatest interest for this patient population. The NEA and NICoE are exploring how to measure patient outcomes that may be associated with these

themes (e.g. stress coping, positive emotional affect, and heightened self-awareness, self-efficacy, and mindfulness).

A key point is that the research protocol would depart from previous studies of expressive writing and psychological health, many of them having been conducted by James Pennebaker of the University of Texas at Austin. Whereas the writing “prompts” in those protocols tended to invite subjects to write about recent or ongoing trauma, the NEA-NICoE protocol currently asks service members to write on any subject they choose. Yet not unlike the Pennebaker studies, the NEA-NICoE research is expected to use natural language processing software and textual thematic analysis to dig deeper into the therapy’s potential mechanism of action.

Further, the study will benefit from NICoE’s state-of-the art technology for studying biological and behavioral processes through the analysis of biomarkers where relevant. And, finally, the research protocol is expected to draw upon data from questionnaires that might be administered at various points of the service members’ experience at NICoE--thus potentially allowing researchers to understand the interactions of expressive writing with other modalities that service members are receiving.

A collaborative research protocol for expressive writing may lend support for a similar study of music therapy in an integrated care setting. NICoE’s unique strength among veteran and military health care facilities is its ability to fuse research and therapy into a seamless whole as the center strives to discover how best to serve this comorbid group of our nation’s military, who surely deserve nothing less. In miniature, the example epitomizes the merits of pursuing federal partnerships to collect, analyze, and report new evidence on music and psychological well-being.

## AUTHOR NOTE

Sunil Iyengar directs the Office of Research & Analysis at the National Endowment for the Arts in Washington, D.C. In that capacity, he chairs the federal Interagency Task Force on the Arts and Human Development.

*Sunil Iyengar*  
*Director of Research & Analysis,*  
*National Endowment for the Arts,*  
*Washington, DC, USA*  
*iyengars@arts.gov*